

PR4



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,506	11/29/2003	Patrik Larsson	LARSSON 22-17-Div	1444
24490	7590	09/27/2004	EXAMINER	
LAW OFFICES OF NAREN CHAGANTI 432 S. CURSON AVE, STE. 12H LOS ANGELES, CA 90036			MAI, TAN V	
			ART UNIT	PAPER NUMBER
			2124	
DATE MAILED: 09/27/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/724,506	Applicant(s) LARSSON ET AL.	
	Examiner Tan V Mai	Art Unit 2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) * | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the multiplier which is described in Figs. 3 and 6, does not reasonably provide enablement for a method of reducing the speed of the a multiplier as recited in claim 7. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to made and use the invention commensurate in scope with these claims.

The claim fails to recite the necessary detail physical structures to perform the recited multiplier nor are there any recitation describing how such an apparatus (or elements) is actually provided in the multiplier. The claim only recites a single step "replacing" without any hardware, i.e., what is/are elements are substitute by the removed elements.

2. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim language is vague and indefinite. For instance, although the preamble of independent claim 7 claim "[a] method of reducing the speed of a multiplier", the claims fail to recite the necessary detail physical structures to perform the recited

multiplier nor are there any recitation describing how such an apparatus (or elements) is actually provided in the multiplier. Sufficient detail apparatus or elements must be recited to adequately describe and constitute the proposed multiplier with the substitute element(s) for reducing the speed of the operations in the multiplier.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu.

Chiu discloses, e.g., see Fig. 2, the invention substantially as claimed, including: a **plurality of carry adders** [coupled together in series] and a **propagate adder** coupled to the last carry save adder. It is noted that Chiu does not specifically detail the claimed "**plurality of half-adder/full-adder series combinations**"; however, Chiu's "**propagate adder**" should have a **plurality of full-adders** and at least one **half-adder** [for the least significant bit]. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Chiu's teachings because the reference discloses a multiplier circuit having a plurality of carry save adders and a propagate adder [at the final stage] as claimed.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger.

As per independent claim 1, Weinberger discloses, e.g., see Fig. 12 & col. 2, lines 49-59, the invention substantially as claimed, including: a **plurality of carry adders** and a **propagate adder (26)** coupled to the last carry save adder. It is noted that Weinberger does not specifically detail the claimed "**output register**"; however, the resulting bit of Weinberger should be stored in **memory means**. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Weinberger's teachings because the reference discloses a multiplier circuit having a plurality of carry save adders and a propagate adder [at the final stage] as claimed.

As per dependent claim 2, the claim adds a "MOST SIGNIFICANT BIT carry output register" and a "MOST SIGNIFICANT BIT sum output register". The feature is old and well known in the art, e.g., see Applicants' Fig. 2 (PRIOR ART).

As per dependent claim 3, the claim adds "wherein at least one of the carry-propagate adders comprises a **half-adder** and the other carry-propagate adders comprise **full-adders**". The features is old and well known in the art because the cascaded "carry-propagate adders" should have a half-adder at the least significant bit when there is NO carry-in signal.

As per independent claim 4, Weinberger discloses, e.g., see Fig. 12 & col. 2, lines 49-59, the invention substantially as claimed, including: a **plurality of carry adders** and a **propagate adder (26)** coupled to the last carry save adder. It is noted

that Weinberger does not specifically detail the claimed "**plurality of half-adder/full-adder series combinations**"; however, Weinberger's "**propagate adder**" should have a **plurality of full-adders** and at least one **half-adder** [for the least significant bit]. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Weinberger's teachings because the reference discloses a multiplier circuit having a plurality of carry save adders and a propagate adder [at the final stage] as claimed.

6. Claims 5-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 7 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, first paragraph & 2nd paragraph, set forth in this Office action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited references are art of interest.

8. Due to the new grounds of rejection cited above, that the office action is NON-FINAL.

9. The following is an examiner's statement of reasons for allowance: the recorded references do NOT teach or suggest the novel "two half-adders" feature as recited in dependent claim 5.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (703) 305-9761. The examiner can normally be reached on Tue-Fri from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (703) 305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are:

Official (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



TAN V. MAI
PRIMARY EXAMINER